

4.0 ELECTRICAL AND MECHANICAL SAFETY

4.1 BACKGROUND

Electrical and mechanical safety are important components of a comprehensive Laboratory Environmental Health and Safety program. This section will outline regulatory requirements, risk and controls associated with electrical and mechanical hazards in laboratory facilities, and ways to minimize potential risks.

4.2 REGULATIONS

Machinery and Machine Guarding, 29 CFR 1910 Subpart O, requires machine guards to be in place on any equipment where machine parts and/or functions may cause injury, and prohibits the removal of guards from machinery.

The Control of Hazardous Energy (Lockout/Tagout), 29 CFR 1910.147, requires specific practices and procedures to safeguard employees from the unexpected energization or startup of machinery and equipment, or the release of hazardous energy during service or maintenance activities.

4.3 HIGH VOLTAGE

The National Electrical Code, NFPA 70 (2011), defines *high voltage* as any voltage over 600 Volts. The University laboratory employees will not perform work on high voltage circuits.

4.4 ALTERATIONS TO EXISTING EQUIPMENT

Alterations to existing equipment must not be made except by authorized and qualified employees, or without design and process input from appropriate professional experts, which may include the University EH&S and Facilities, electrical and/or mechanical engineers, and technical representatives of the manufacturer of the equipment.

No equipment may be altered by removing machine guards which were part of the equipment as designed and provided by the manufacturer.